



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,473	06/29/2001	Kornelis A. Vissers	22300-05810	6539

758 7590 03/05/2004

FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

EXAMINER

KIM, KENNETH S

ART UNIT	PAPER NUMBER
----------	--------------

2111

7

DATE MAILED: 03/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/895,473

Applicant(s)

VISSERS ET AL.

Examin r

Kenneth S KIM

Art Unit

2111

-- The MAILING DATE of this communication appears on the c ver sh et with th c rresp ndence address --

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14 and 31-35 is/are allowed.
- 6) ☒ Claim(s) 1-9, 15-30 and 36-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


KENNETH S. KIM
PRIMARY EXAMINER

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Art Unit: 2111

1. Claims 1-43 are presented for examination.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 1, it is not clear how an operation associated with two or more issue slots can be replaced with an operation associated with less issue slots. (It is not clear how the integrity of the original operation is preserved by replacing with a non-equivalent operation.)

(b) Claim 15, it is not clear what is the significance of the instruction using fewer than all of the issue slots, since all instructions are mapped to available issue slots.

(c) Claims 23 and 36, the same as (a) and (b) respectively.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

Art Unit: 2111

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 15-22 and 36-43 rejected under 35 U.S.C. 102(b) as being anticipated by Van Eijndhoven et al, U.S. Patent No. 6,076,154, submitted by the applicant.

Van Eijndhoven et al teaches the invention as claimed including a method of executing instruction by a processor having a functional unit associated with a plurality of issue slots (col. 4, line 45), the method comprising:

- (a) determining whether the instruction can be executed using fewer than all of the issue slots associated with the functional unit (col. 6, line 1),
- (b) when the instruction can be executed using fewer than all of the issue slots associated with the functional unit, mapping the instruction to fewer than all of the issue slots (col. 6, line 8), and

further teaches as in claims 16-22,

- (c) analyzing the instruction to determine (col. 6, line 2) – claim 16,
- (d) determining whether at most two registers used and mapping the instruction to a single issue slot (col. 5, line 64) – claims 17-20,
- (e) wherein the instruction is a shuffle instruction or a floating point operation (can be any type super-operation; col. 5, line 50) – claims 21 and 22.

The program product claims 36-43 are equivalently rejected based on the same reason.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Taylor et al taught a method of executing a super-instruction requiring $(n+m)$ input operand from n -output data source.

Derrick et al taught a method of executing instructions requiring more register ports than available by splitting into multiple instructions.

Hondou taught a method of optimized issuing instructions to issue destinations.

Griffith et al taught a method of binding instructions to dispatch ports.

Slavenburg et al taught a method of issuing from reduced number of issue slots.

Mehra taught a method issuing to a functional unit associated with multiple issue slots.

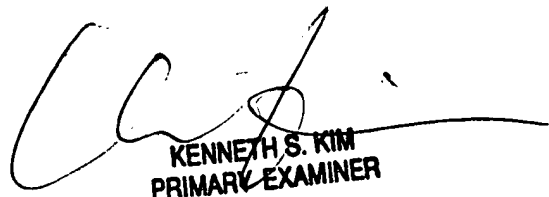
7. Claims 10-14 and 31-35 are allowed over the prior art of record, for the references do not teach the step of replacing a super-operation that uses at most two input registers and one output register with an equivalent operation using one issue slot.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth S KIM whose telephone number is (703) 305-9693. The examiner can normally be reached on M-F (8:30-17:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

March 2, 2004


KENNETH S. KIM
PRIMARY EXAMINER